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1.11 Attempts at a Quantitative Formulation of the Lewis Definition of Acids and Bases; 1.11.1 Hard and Soft Acids and Bases; 1.11.2 The ECW and ECT Models; 1.11.3 The Beta and Xi Equation; 1.11.4 A Chemometric Approach  
1.11.5 Quantum Chemical Descriptors for Basicity Scales  
1.12 Concluding Remarks and Content of Chapters 2-7; References; 2 The Donor Number or SbCl<sub>5</sub> Affinity Scale; 2.1 Structure of SbCl<sub>5</sub> Complexes; 2.2 Definition of the Donor Number Scale; 2.3 Experimental Determination of the Donor Number; 2.4 The Donor Number Scale: Data; 2.5 Critical Discussion; References; 3 The BF<sub>3</sub> Affinity Scale; 3.1 Structure of BF<sub>3</sub> Complexes; 3.2 Definition of the BF<sub>3</sub> Affinity Scale; 3.3 Experimental Determination of the BF<sub>3</sub> Affinity Scale; 3.4 The BF<sub>3</sub> Affinity Scale: Data; 3.5 Discussion; 3.5.1 Medium Effects 3.5.2 Hardness of BF<sub>3</sub> 3.5.3 Comparison of the BF<sub>3</sub> and SbCl<sub>5</sub> Affinity Scales; 3.5.4 Computation of the BF<sub>3</sub> Affinity; 3.6 Conclusion; References; 4 Thermodynamic and Spectroscopic Scales of Hydrogen-Bond Basicity and Affinity; 4.1 Structure of Hydrogen-Bonded Complexes; 4.2 Hydrogen-Bond Basicity Scales: Early Works; 4.3 The 4-Fluorophenol Hydrogen-Bond Basicity Scale; 4.3.1 Definition; 4.3.2 Method of Determination; 4.3.3 Polyfunctional Hydrogen-Bond Acceptors; 4.3.4 Data; 4.3.5 Range of Validity of the Scale; 4.4 Hydrogen-Bond Affinity Scales: Early Studies  
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5.3 Is the Diiodine Basicity Scale a General Halogen-Bond Basicity Scale?

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Sommario/riassunto

The Lewis concept of acids and bases is discussed in every general, organic and inorganic chemistry textbook. This is usually just a descriptive treatment, as it is not possible to devise a single numerical scale suitable for all occasions. However quantitative Lewis acid-base chemistry can be developed by compiling reaction-specific basicity scales which can be used in specific branches of chemistry and biochemistry. Lewis Basicity and Affinity Scales: Data and Measurement brings together for the first time a comprehensive range of Lewis basicity/affinity data in one volume. More t

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